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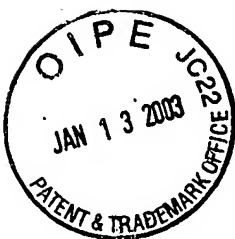
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SEQUENCE LISTING

<110> Anderson, Marilyn, A., Lay, Fung T., Heath, Robyn, L.

<120> Plant-derived molecules and genetic sequences encoding same and uses therefor

<130> 18-01

<140> USSN 10/072,809

<141> 2002-02-08

<150> USSN 60/267,271

<151> 2001-02-08

<160> 62

<170> PatentIn version 3.0

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<220>

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<210> 4

<211> 26

<212> DNA

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<220>

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<223> Description of Artificial Sequence: Primer

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Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
1 5 10 15

aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt 96
Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
20 25 30

cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt 141
His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys
35 40 45

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<211> 47
<212> PRT
<213> Nicotiana alata

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Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
 20 25 30

His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys
 35 40 45

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 <222> (1)..(75)

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 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
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ctc ttt gtt gcc tat gag gtg caa gct 75
 Leu Phe Val Ala Tyr Glu Val Gln Ala
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<210> 10
 <211> 25
 <212> PRT
 <213> Nicotiana alata

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Leu Phe Val Ala Tyr Glu Val Gln Ala
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 <213> Nicotiana alata

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 <221> CDS
 <222> (1)..(99)

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 Val Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu
 1 5 10 15

gaa gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat 96
 Glu Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp
 20 25 30

aac 99
 Asn

<210> 12

<211> 33
 <212> PRT
 <213> Nicotiana alata

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 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
 1 5 10 15
 ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc 96
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
 20 25 30
 aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct 144
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
 35 40 45
 tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga 192
 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
 50 55 60
 agg tgc cta tgt act aag cca tgt 216
 Arg Cys Leu Cys Thr Lys Pro Cys
 65 70

<210> 14
 <211> 72
 <212> PRT
 <213> Nicotiana alata

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 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
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 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
 20 25 30
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
 35 40 45

Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
 50 55 60

Arg Cys Leu Cys Thr Lys Pro Cys
 65 70

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 <213> Nicotiana alata

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 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
 1 5 10 15
 aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt 96
 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
 20 25 30
 cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt gtg 144
 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val
 35 40 45
 ttt gat gag aag atg act aaa aca gga gct gaa att ttg gct gag gaa 192
 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu
 50 55 60
 gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat aac 240
 Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn
 65 70 75 80

<210> 16
 <211> 80
 <212> PRT
 <213> Nicotiana alata

<400> 16
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 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
 20 25 30
 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val
 35 40 45
 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu
 50 55 60
 Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn
 65 70 75 80

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 1 5 10 15

ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc 96
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
 20 25 30

aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct 144
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
 35 40 45

tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga 192
 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
 50 55 60

agg tgc cta tgt act aag cca tgt gtg ttt gat gag aag atg act aaa 240
 Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Thr Lys
 65 70 75 80

aca gga gct gaa att ttg gct gag gaa gca aaa act ttg gct gca gct 288
 Thr Gly Ala Glu Ile Leu Ala Glu Glu Ala Lys Thr Leu Ala Ala Ala
 85 90 95

ttg ctt gaa gaa gag ata atg gat aac taa ttagagatta gaagaaatta 338
 Leu Leu Glu Glu Glu Ile Met Asp Asn
 100 105

aggatgcagt atcacacata ataaagtttc tacctttctt aaaagtgtag ctaatgttgt 398

gttttaattg gcttttagta gccttttatt acactttaaa taagtgtggc acttcaatcc 458

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ctttggttaa aaaaaaaaaa aaa 541

<210> 18
 <211> 105
 <212> PRT
 <213> Nicotiana alata

<400> 18
 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
 1 5 10 15

Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
 20 25 30

Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala

1	5	10	15
Leu Phe Val Thr Tyr Glu Val Glu Ala Gln Gln Ile Cys Lys Ala Pro	20	25	30
Ser Gln Thr Phe Pro Gly Leu Cys Phe Met Asp Ser Ser Cys Arg Lys	35	40	45
Tyr Cys Ile Lys Glu Lys Phe Thr Gly Gly His Cys Ser Lys Leu Gln	50	55	60
Arg Lys Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Lys Ile Ser Ser	65	70	75
Glu Val Lys Ala Thr Leu Gly Glu Glu Ala Lys Thr Leu Ser Glu Val	85	90	95
Val Leu Glu Glu Glu Ile Met Met Glu	100	105	

<210> 22
 <211> 78
 <212> PRT
 <213> peptide

<400> 22
Met Ala Asn Ser Met Arg Phe Phe Ala Thr Val Leu Leu Ile Ala Leu
1 5 10 15
Leu Val Thr Ala Thr Glu Met Gly Pro Met Thr Ile Ala Glu Ala Arg
20 25 30
Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Pro Cys Ser Arg Asp
35 40 45
Ser Asn Cys Ala Thr Val Cys Leu Thr Glu Gly Phe Ser Gly Gly Arg
50 55 60
Cys Pro Trp Ile Pro Pro Arg Cys Phe Cys Thr Ser Pro Cys
65 70 75

<210> 23
 <211> 78
 <212> PRT
 <213> peptide

<400> 23
Met Gly Arg Ser Ile Arg Leu Phe Ala Thr Phe Phe Leu Ile Ala Met
1 5 10 15
Leu Phe Leu Ser Thr Glu Met Gly Pro Met Thr Ser Ala Glu Ala Arg
20 25 30
Thr Cys Glu Ser Gln Ser His Arg Phe His Gly Thr Cys Val Arg Glu
35 40 45
Ser Asn Cys Ala Ser Val Cys Gln Thr Glu Gly Phe Ile Gly Gly Asn
50 55 60

Cys Arg Ala Phe Arg Arg Arg Cys Phe Cys Thr Arg Asn Cys
 65 70 75

<210> 24
 <211> 77
 <212> PRT
 <213> peptide

<400> 24
 Met Lys Leu Ser Met Arg Leu Ile Ser Ala Val Leu Ile Met Phe Met
 1 5 10 15

Ile Phe Val Ala Thr Gly Met Gly Pro Val Thr Val Glu Ala Arg Thr
 20 25 30

Cys Glu Ser Gln Ser His Arg Phe Lys Gly Thr Cys Val Ser Ala Ser
 35 40 45

Asn Cys Ala Asn Val Cys His Asn Glu Gly Phe Val Gly Gly Asn Cys
 50 55 60

Arg Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg His Cys
 65 70 75

<210> 25
 <211> 47
 <212> PRT
 <213> peptide

<400> 25
 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
 1 5 10 15

Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
 20 25 30

His Cys Ser Lys Leu Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys
 35 40 45

<210> 26
 <211> 47
 <212> PRT
 <213> peptide

<400> 26
 Gln Ile Cys Lys Ala Pro Ser Gln Thr Phe Pro Gly Leu Cys Phe Met
 1 5 10 15

Asp Ser Ser Cys Arg Lys Tyr Cys Ile Lys Glu Lys Phe Thr Gly Gly
 20 25 30

His Cys Ser Lys Leu Gln Arg Lys Cys Leu Cys Thr Lys Pro Cys
 35 40 45

<210> 27
 <211> 47
 <212> PRT
 <213> peptide

<400> 27
 Arg His Cys Glu Ser Leu Ser His Arg Phe Lys Gly Pro Cys Thr Arg
 1 5 10 15
 Asp Ser Asn Cys Ala Ser Val Cys Glu Thr Glu Arg Phe Ser Gly Gly
 20 25 30
 Asn Cys His Gly Phe Arg Arg Arg Cys Phe Cys Thr Lys Pro Cys
 35 40 45
 <210> 28
 <211> 47
 <212> PRT
 <213> peptide

<400> 28
 Arg Val Cys Glu Ser Gln Ser His Gly Phe His Gly Leu Cys Asn Arg
 1 5 10 15
 Asp His Asn Cys Ala Leu Val Cys Arg Asn Glu Gly Phe Ser Gly Gly
 20 25 30
 Arg Cys Lys Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg Ile Cys
 35 40 45
 <210> 29
 <211> 47
 <212> PRT
 <213> peptide

<400> 29
 Arg Thr Cys Glu Ser Gln Ser His Arg Phe His Gly Thr Cys Val Arg
 1 5 10 15
 Glu Ser Asn Cys Ala Ser Val Cys Gln Thr Glu Gly Phe Ile Gly Gly
 20 25 30
 Asn Cys Arg Ala Phe Arg Arg Arg Cys Phe Cys Thr Arg Asn Cys
 35 40 45
 <210> 30
 <211> 47
 <212> PRT
 <213> peptide

<400> 30
 Arg Ile Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Pro Cys Val Ser
 1 5 10 15
 Asn Lys Asn Cys Ala Gln Val Cys Met Gln Glu Trp Gly Glu Gly Gly
 20 25 30
 Asn Cys Asp Gly Pro Leu Arg Arg Cys Lys Cys Met Arg Arg Cys
 35 40 45
 <210> 31
 <211> 51
 <212> PRT

<213> peptide

<400> 31

Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
1 5 10 15

Asn Asn Asn Ala Cys Arg Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
35 40 45

Phe Pro Cys
50

<210> 32

<211> 20

<212> PRT

<213> peptide

<400> 32

Arg Asn Cys Glu Ser Leu Ser His Arg Phe Lys Gly Pro Cys Thr Arg
1 5 10 15

Asp Ser Asn Cys
20

<210> 33

<211> 51

<212> PRT

<213> peptide

<400> 33

Gln Lys Leu Cys Glu Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
35 40 45

Phe Pro Cys
50

<210> 34

<211> 51

<212> PRT

<213> peptide

<400> 34

Gln Lys Leu Cys Gln Arg Pro Ser Gly Thr Trp Ser Gly Val Cys Gly
1 5 10 15

Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Arg Leu Glu Lys Ala Arg
20 25 30

His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr

35 40 45
 Phe Pro Cys
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 Asn Asn Asn Ala Cys Lys Asn Gln Cys Ile Asn Leu Glu Lys Ala Arg
 20 25 30
 His Gly Ser Cys Asn Tyr Val Phe Pro Ala His Lys Cys Ile Cys Tyr
 35 40 45
 Phe Pro Cys
 50
 <210> 36
 <211> 52
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 <400> 36
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 1 5 10 15
 Arg Asn Asn Asn Ala Cys Arg Asn Phe Cys Ile Lys Leu Glu Lys Ser
 20 25 30
 Arg His Gly Ser Cys Asn Ile Pro Phe Pro Ser Asn Lys Cys Ile Cys
 35 40 45
 Tyr Phe Pro Cys
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 <211> 47
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 <400> 37
 Lys Ile Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Pro Cys Met Ser
 1 5 10 15
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 20 25 30
 Asn Cys Asp Gly Pro Phe Arg Arg Cys Lys Cys Ile Arg Gln Cys
 35 40 45
 <210> 38
 <211> 47

<212> PRT
<213> peptide

<400> 38

Lys Val Cys Arg Gln Arg Ser Ala Gly Phe Lys Gly Pro Cys Val Ser
1 5 10 15

Asp Lys Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly
20 25 30

Asn Cys Asp Gly Pro Phe Arg Arg Cys Lys Cys Ile Arg Gln Cys
35 40 45

<210> 39

<211> 47

<212> PRT

<213> peptide

<400> 39

Lys Thr Cys Glu Asn Leu Val Asp Thr Tyr Arg Gly Pro Cys Phe Thr
1 5 10 15

Thr Gly Ser Cys Asp Asp His Cys Lys Asn Lys Glu His Leu Leu Ser
20 25 30

Gly Arg Cys Arg Asp Asp Val Arg Cys Trp Cys Thr Arg Asn Cys
35 40 45

<210> 40

<211> 48

<212> PRT

<213> peptide

<400> 40

Arg Val Cys Met Gly Lys Ser Ala Gly Phe Lys Gly Leu Cys Met Arg
1 5 10 15

Asp Gln Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly
20 25 30

Asn Cys Asp Gly Val Met Arg Gln Cys Lys Cys Ile Arg Gln Cys Trp
35 40 45

<210> 41

<211> 48

<212> PRT

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<400> 41

Arg Val Cys Arg Arg Arg Ser Ala Gly Phe Lys Gly Leu Cys Met Ser
1 5 10 15

Asp His Asn Cys Ala Gln Val Cys Leu Gln Glu Gly Trp Gly Gly Gly
20 25 30

Asn Cys Asp Gly Val Ile Arg Gln Cys Lys Cys Ile Arg Gln Cys Trp
35 40 45

<210> 42
 <211> 20
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 Glu Val Cys Glu Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn
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 Thr Gly His Cys
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<210> 43
 <211> 47
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 <213> peptide

<400> 43
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 Asp Arg Leu Cys Ser Asn Glu Cys Val Lys Glu Glu Gly Gly Trp Thr
 20 25 30
 Ala Gly Tyr Cys His Leu Arg Tyr Cys Arg Cys Gln Lys Ala Cys
 35 40 45

<210> 44
 <211> 45
 <212> PRT
 <213> peptide

<400> 44
 Asn Thr Cys Glu Asn Leu Ala Gly Ser Tyr Lys Gly Val Cys Phe Gly
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 Gly Cys Asp Arg His Cys Arg Thr Gln Glu Gly Ala Ile Ser Gly Arg
 20 25 30
 Cys Arg Asp Asp Phe Arg Cys Trp Cys Thr Lys Asn Cys
 35 40 45

<210> 45
 <211> 50
 <212> PRT
 <213> peptide

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 Leu Cys Asn Glu Arg Pro Ser Gln Thr Trp Ser Gly Asn Cys Gly Asn
 1 5 10 15
 Thr Ala His Cys Asp Lys Gln Cys Gln Asp Trp Glu Lys Ala Ser His
 20 25 30
 Gly Ala Cys His Lys Arg Glu Asn His Trp Lys Cys Phe Cys Tyr Phe
 35 40 45
 Asn Cys

50

<210> 46
<211> 51
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<213> peptide

<400> 46
Lys Leu Cys Asp Val Pro Ser Gly Thr Trp Ser Gly His Cys Gly Ser
1 5 10 15
Ser Ser Lys Cys Ser Gln Gln Cys Lys Asp Arg Glu His Phe Ala Tyr
20 25 30
Gly Gly Ala Cys His Tyr Gln Phe Pro Ser Val Lys Cys Phe Cys Lys
35 40 45
Arg Gln Cys
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<210> 47
<211> 50
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<213> peptide

<400> 47
Glu Leu Cys Glu Lys Ala Ser Lys Thr Trp Ser Gly Asn Cys Gly Asn
1 5 10 15
Thr Gly His Cys Asp Asn Gln Cys Lys Ser Trp Glu Gly Ala Ala His
20 25 30
Gly Ala Cys His Val Arg Asn Gly Lys His Met Cys Phe Cys Tyr Phe
35 40 45
Asn Cys
50

<210> 48
<211> 46
<212> PRT
<213> peptide

<400> 48
Asn Thr Cys Glu His Leu Ala Asp Thr Tyr Arg Gly Val Cys Phe Thr
1 5 10 15
Asn Ala Ser Cys Asp Asp His Cys Lys Asn Lys Ala His Leu Ile Ser
20 25 30
Gly Thr Cys His Asp Trp Lys Cys Phe Cys Thr Gln Asn Cys
35 40 45

<210> 49
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 Thr Gly His Cys Asp Thr Gln Cys Arg Asn Trp Glu Ser Ala Lys His
 20 25 30
 Gly Ala Cys His Lys Arg Gly Asn Trp Lys Cys Phe Cys Tyr Phe Asn
 35 40 45

Cys

<210> 50
 <211> 79
 <212> PRT
 <213> peptide

<400> 50
 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Ala Arg Glu Ile
 1 5 10 15
 Phe Thr Gly Leu Cys Ile Thr Asn Pro Gln Cys Arg Lys Ala Cys Ile
 20 25 30
 Lys Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg Arg Cys
 35 40 45
 Leu Cys Thr Lys Pro Cys Thr Gly Ala Glu Thr Leu Ala Glu Glu Ala
 50 55 60
 Thr Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn
 65 70 75

<210> 51
 <211> 105
 <212> PRT
 <213> peptide

<400> 51
 Met Ala Arg Ser Val Cys Phe Met Ala Phe Ala Ile Leu Ala Val Met
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 20 25 30
 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
 35 40 45
 Cys Ile Lys Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
 50 55 60
 Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Ile Lys
 65 70 75 80
 Thr Gly Ala Glu Thr Leu Ala Glu Glu Ala Thr Thr Leu Ala Ala Ala
 85 90 95
 Leu Leu Glu Glu Glu Ile Met Asp Asn

100 105

<210> 52
 <211> 106
 <212> PRT
 <213> peptide

<400> 52
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 20 25 30
 Ser Asn Thr Phe Pro Gly Leu Cys Ile Thr Lys Pro Pro Cys Arg Lys
 35 40 45
 Ala Cys Leu Ser Glu Lys Phe Thr Asp Gly Lys Cys Ser Lys Ile Leu
 50 55 60
 Arg Arg Cys Ile Cys Tyr Lys Pro Cys Val Phe Asp Gly Lys Met Ile
 65 70 75 80
 Gln Thr Gly Ala Glu Asn Leu Ala Glu Glu Ala Glu Thr Leu Ala Ala
 85 90 95
 Ala Leu Leu Glu Glu Glu Met Met Asp Asn
 100 105

<210> 53
 <211> 47
 <212> PRT
 <213> peptide

<400> 53
 Arg Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Pro Cys Ser Arg
 1 5 10 15
 Asp Ser Asn Cys Ala Thr Val Cys Leu Thr Glu Gly Phe Ser Gly Gly
 20 25 30
 Arg Cys Pro Trp Ile Pro Pro Arg Cys Phe Cys Thr Ser Pro Cys
 35 40 45

<210> 54
 <211> 19
 <212> PRT
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<400> 54
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 1 5 10 15
 Glu Ser Asn

<210> 55
 <211> 47
 <212> PRT

<213> peptide

<400> 55

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1 5 10 15

Ala Ser Asn Cys Ala Asn Val Cys His Asn Glu Gly Phe Val Gly Gly
20 25 30

Asn Cys Arg Gly Phe Arg Arg Arg Cys Phe Cys Thr Arg His Cys
35 40 45

<210> 56

<211> 1104

<212> DNA

<213> Nicotiana alata

<220>

<221> CDS

<222> (1)..(1104)

<400> 56

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Pro Arg Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys
20 25 30

gca ggc acg aag ggt tgt aag tac ttc agt gat gat gga act ttt gtt 144
Ala Gly Thr Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val
35 40 45

tgt gaa gga gag tct gat cct aga aat cca aag gct tgt acc tta aac 192
Cys Glu Gly Glu Ser Asp Pro Arg Asn Pro Lys Ala Cys Thr Leu Asn
50 55 60

tgt gat cca aga att gcc tat gga gtt tgc ccg cgt tca gaa gaa aag 240
Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser Glu Glu Lys
65 70 75 80

aag aat gat cgg ata tgc acc aac tgt tgc gca ggc acg aag ggt tgt 288
Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr Lys Gly Cys
85 90 95

aag tac ttc agt gat gat gga act ttt gtt tgt gaa gga gag tct gat 336
Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp
100 105 110

cct aga aat cca aag gct tgt cct cgg aat tgc gat cca aga att gcc 384
Pro Arg Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Pro Arg Ile Ala
115 120 125

tat ggg att tgc cca ctt gca gaa gaa aag aag aat gat cgg ata tgc 432
Tyr Gly Ile Cys Pro Leu Ala Glu Glu Lys Lys Asn Asp Arg Ile Cys
130 135 140

acc aac tgt tgc gca ggc aaa aag ggt tgt aag tac ttt agt gat gat	480
Thr Asn Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp	
145 150 155 160	
gga act ttt gtt tgt gaa gga gag tct gat cct aaa aat cca aag gcc	528
Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Lys Asn Pro Lys Ala	
165 170 175	
tgt cct cgg aat tgt gat gga aga att gcc tat ggg att tgc cca ctt	576
Cys Pro Arg Asn Cys Asp Gly Arg Ile Ala Tyr Gly Ile Cys Pro Leu	
180 185 190	
tca gaa gaa aag aag aat gat cgg ata tgc acc aac tgc tgc gca ggc	624
Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly	
195 200 205	
aaa aag ggt tgt aag tac ttt agt gat gat gga act ttt gtt tgt gaa	672
Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu	
210 215 220	
gga gag tct gat cct aaa aat cca aag gct tgt cct cgg aat tgt gat	720
Gly Glu Ser Asp Pro Lys Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp	
225 230 235 240	
gga aga att gcc tat ggg att tgc cca ctt tca gaa gaa aag aag aat	768
Gly Arg Ile Ala Tyr Gly Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn	
245 250 255	
gat cgg ata tgc aca aac tgt tgc gca ggc aaa aag ggc tgt aag tac	816
Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr	
260 265 270	
ttt agt gat gat gga act ttt gtt tgt gaa gga gag tct gat cct aga	864
Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Arg	
275 280 285	
aat cca aag gcc tgt cct cgg aat tgt gat gga aga att gcc tat gga	912
Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Gly Arg Ile Ala Tyr Gly	
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att tgc cca ctt tca gaa gaa aag aag aat gat cgg ata tgc acc aat	960
Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn	
305 310 315 320	
tgt tgc gca ggc aag aag ggc tgt aag tac ttt agt gat gat gga act	1008
Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr	
325 330 335	
ttt att tgt gaa gga gaa tct gaa tat gcc agc aaa gtg gat gaa tat	1056
Phe Ile Cys Glu Gly Glu Ser Glu Tyr Ala Ser Lys Val Asp Glu Tyr	
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gtt ggt gaa gtg gag aat gat ctc cag aag tct aag gtt gct gtt tcc	1104
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			20					25					30		

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<223> X = no amino acid or G or K

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<223> X = no amino acid or A

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<223> X = no amino acid or I or T

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<222> (94)..(94)
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<223> X = no amino acid or E

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<222> (108)..(108)

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<222> (109)..(109)

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<222> (110)..(110)

<223> X = no amino acid or M

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<222> (111)..(111)

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<220>

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<222> (112)..(112)

<223> X = no amino acid or N or E

<400> 61

Met Xaa Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Xaa
20 25 30

Xaa Xaa Cys Xaa Xaa Xaa Ser Xaa Xaa Phe Xaa Gly Xaa Cys Xaa Xaa
35 40 45

Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa Glu Xaa Phe Xaa Xaa Gly
50 55 60

Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Cys Thr Xaa Xaa Cys Xaa
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
100 105 110

<210> 62

<211> 47

<212> PRT

<213> Peptide

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 <222> (1)..(46)
 <223> X is any amino acid. X is depicted as a in the text.

<400> 62
 Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Cys Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Cys Xaa Xaa Xaa Cys
 35 40 45